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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/720,220

11/25/2003

Joon Tae Ahn

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43569 7590 12/21/2006  
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EXAMINER

DIACOU, ARI M

ART UNIT

PAPER NUMBER

3663

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

12/21/2006

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/720,220

Applicant(s)

AHN ET AL.

Examiner

Ari M. Diacou

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2, 5 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11-1-2006 has been entered.

### ***Response to Arguments***

2. The arguments in the remarks filed 9-22-2006 are moot in view of the new grounds of rejection, which has been necessitated by amendment.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 2, 5 and 8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In claim 1, it is impossible for any amplify to have a gain that is "constantly maintained regardless of a power level of the input signal, " for two reasons. First

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constant is a practical impossibility in the time or wavelength domains, for various reasons. Second, gain can always be saturated, and it is a certainty that all materials have a power threshold at which they will breakdown/melt/explode. Examiner suggest changing the offending phrase quoted above to "clamped", or find some other way to qualify the statement that doesn't include physical impossibilities.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 5 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al. (USP No. 6356685).

- Regarding claim 1, Kim discloses a gain-clamped optical amplifier comprising:
  - optical reflection means installed on an input optical fiber; [120]
  - optical anti-reflection means installed on an output the optical fiber opposite to the input optical fiber having the optical reflection means installed on; and [160]
  - an optical amplifier located between the optical reflection means and the optical anti-reflection means, for amplifying an input signal and an optical reflection signal [130]

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- wherein an amplified spontaneous emission light emitted from the optical amplifier to the input optical fiber is reflected by the optical reflection means installed in the input optical fiber and amplified in the optical amplifier; [Col. 2: 1-18, 48-65]
  - wherein the spontaneous emission light inputted to the input optical fiber and reflected by the optical reflection means is in a same direction as the input optical signal; and [Col. 2: 1-18, 48-65]
  - wherein a change in the input signal is compensated by the amplified spontaneous emission light such that a gain is constantly maintained regardless of a power level of the input signal. [Definition of gain-clamping, see Col. 1: 43-55]
- Claims 2, 5 and 8 are clearly anticipated by Fig. 1.

7. Claims 1, 2 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Bousselet et al. (USP No. 6466345).

- Regarding claim 1, Bousselet discloses a gain-clamped optical amplifier comprising:
  - optical reflection means installed on an input optical fiber; [14]
  - optical anti-reflection means installed on an output the optical fiber opposite to the input optical fiber having the optical reflection means installed on; and [11]

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- an optical amplifier located between the optical reflection means and the optical anti-reflection means, for amplifying an input signal and an optical reflection signal [4]
  - wherein an amplified spontaneous emission light emitted from the optical amplifier to the input optical fiber is reflected by the optical reflection means installed in the input optical fiber and amplified in the optical amplifier; [EDFA's can use their ASE as a pump]
  - wherein the spontaneous emission light inputted to the input optical fiber and reflected by the optical reflection means is in a same direction as the input optical signal; and [Col. 3: 50-63]
  - wherein a change in the input signal is compensated by the amplified spontaneous emission light such that a gain is constantly maintained regardless of a power level of the input signal. [In EDFAs, gain (when unsaturated) is independent of input power.]
- Claims 2 and 5 are clearly anticipated by Fig. 2.

### ***Conclusion***

8. While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

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9. The references made herein are done so for the convenience of the applicant. They are in no way intended to be limiting. The prior art should be considered in its entirety.
10. The prior art which is cited but not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ari M. Diacou whose telephone number is (571) 272-5591. The examiner can normally be reached on Monday - Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AMD 12/18/2006

  
JACK KEITH  
SUPERVISORY PATENT EXAMINER